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**Hallett, C.S. (2010) *Assessing the health of estuaries: an Australian perspective*. In: 13th International River Symposium, 11 - 14 October, Perth, Western Australia.**

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Chris Hallett, Murdoch University

# Assessing the health of estuaries: an Australian perspective

or 'How do we catch up?'



## Key principles

- Water quality is not enough
- Don't reinvent the wheel
- No excuses
- Vision is crucial





# The importance of biota (Water quality is not enough)



**US Clean Water Act:** ‘...restore and maintain the physical, chemical and **biological** integrity of the nation’s waters’

**EU Water Framework Directive:** ‘... achieve good chemical and **ecological** status by 2015’

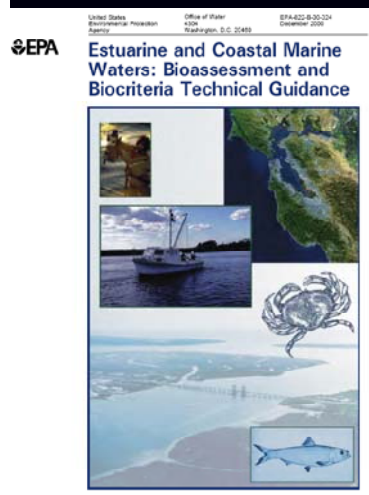
# Learning from others (Don't reinvent the wheel)

USA

(Nestlerode *et al.* 2008)

Europe

(de Jonge *et al.* 2006)



**Tier 3**  
Intensive site  
assessment

**Tier 2**  
Rapid condition  
assessment

**Tier 1**  
Landscape-level  
assessment

Multiple indicators

Diagnostic  
monitoring

Operational  
monitoring

Surveillance  
monitoring

## South African pragmatism, European cooperation (No excuses)

## South Africa:

- Large scale assessments: >190 estuaries across many bioregions
- Flexible approaches for data poor systems

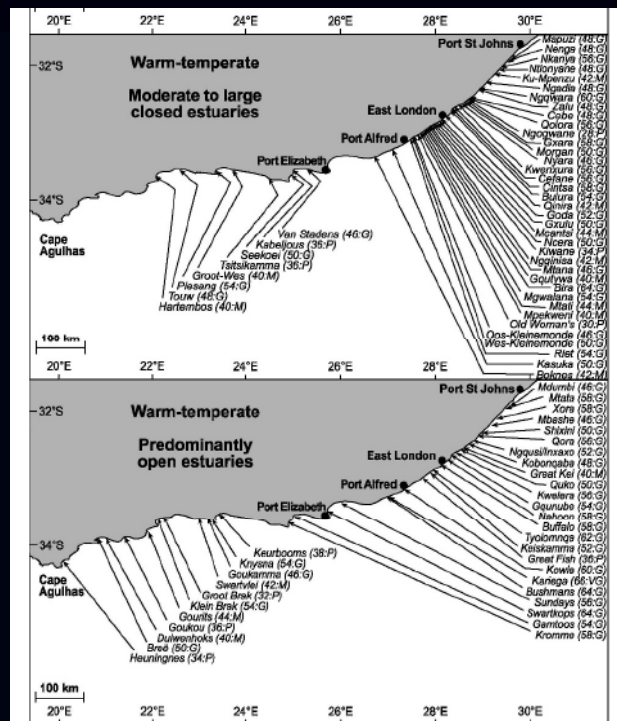
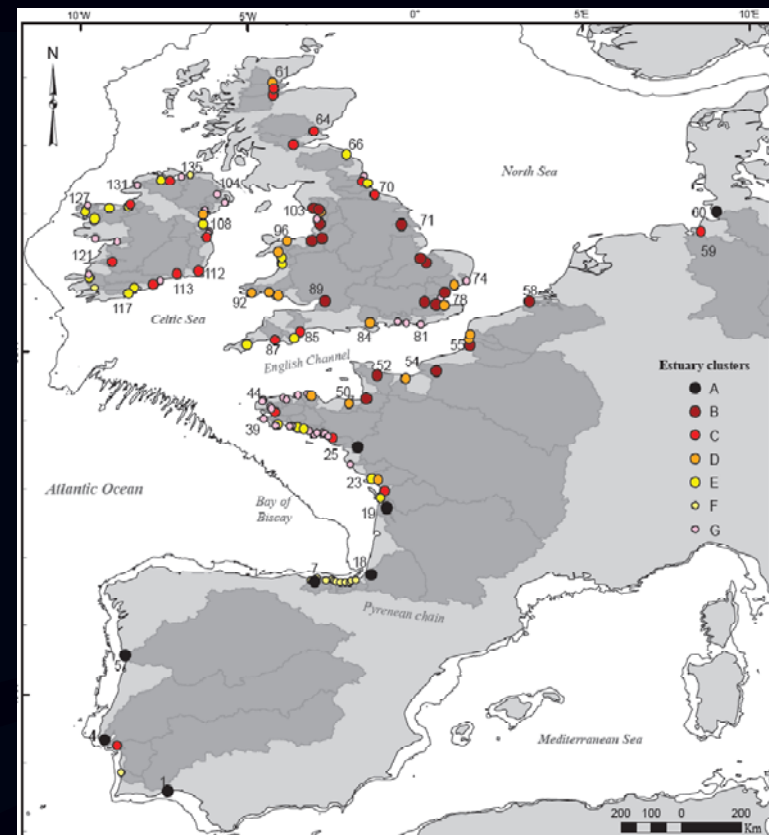


Fig. 2. The distribution and relative positions of small closed estuaries, moderate to large closed estuaries, and predominantly open estuaries in the warm-temperate biogeographic region.

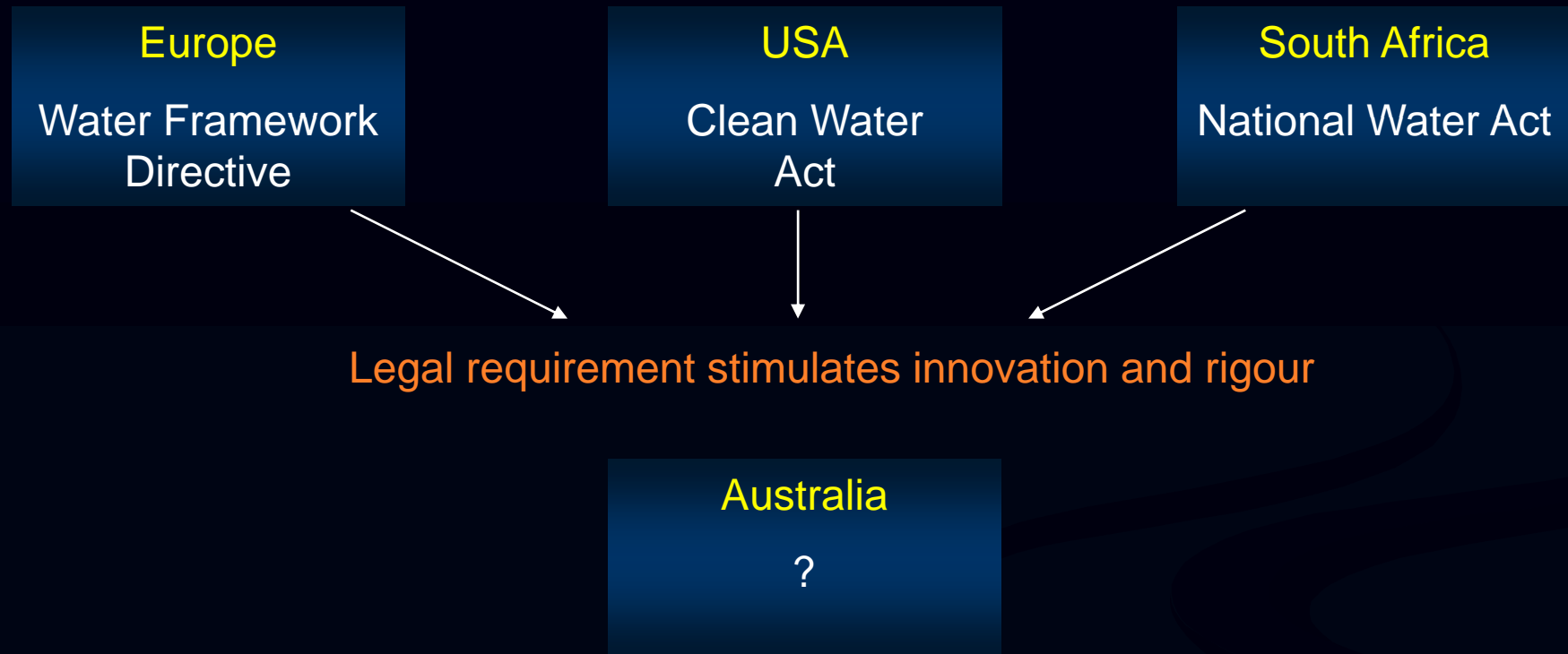
Harrison and Whitfield 2006

## Europe:

- Large scale assessments: transitional waters across 27 countries
- Sophisticated approaches to intercalibration

Nicolas *et al.* 2010

## The legislative context (Vision is crucial)



- No legislation to drive innovation
- Vision and commitment required



# Lessons

- Ecological and social indicators are essential
- Rigorous evaluation of existing schemes and adoption of appropriate tools
- Pro-active, 'can-do' approach
- Collaboration, vision, commitment are required

